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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Bernd Sachweh

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EXAMINER

FLETCHER III, WILLIAM P

ART UNIT

PAPER NUMBER

1792

MAIL DATE

DELIVERY MODE

11/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,858	Applicant(s) SACHWEH ET AL.	
	Examiner William P. Fletcher III	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-25,27-33,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-25,27-33,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment and remarks filed on July 13, 2009, are noted with appreciation.
2. Claims 14-25, 27-33, 36, and 37, are now pending.

Response to Arguments

3. Applicant's arguments filed July 13, 2009, have been fully considered but they are not persuasive.

A. Claim 14 has been amended to recite: *a catalytically active solid material or a precursor thereof*. While the material applied in the cited prior art is a liquid aerosol, it is the Examiner's position that the final, useful form is a solid. As such, it reads on a precursor of a catalytically active solid material, thereby satisfying the claim as amended.

B. New claim 37 recites the synthesis of maleic anhydride, phthalic anhydride, or ethylene oxide. As noted in paragraph 8 of the prior Office action, WO '158 teaches a reactor for the synthesis via oxidation of phthalic anhydride, maleic anhydride, etc., and that it would have been obvious to one skilled in the art to utilize the process of WO '011 to coat catalyst on the internals of the reactor of WO '158 or, in the alternative, it would have been obvious to one skilled in the art to utilize, as the reactor in WO '011, the reactor of WO '158.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1792

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 14-19, 23-25, 27-31, 33, and 36, are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/41011 A1 (see attached machine translation).

A. Claims 14, 15, and 27

i. WO '011 teaches a process for coating the internal surfaces of a reactor, for the catalytic gas phase oxidation preparation of (meth)acrolein and/or (meth)acrylic acid, with a catalytically active material or a precursor thereof. Application may be by means of spraying (i.e., aerosol), with the catalytic material's being in the disperse phase. Claim 14 has been amended to recite: *a catalytically active solid material or a precursor thereof*. While the material applied in the cited prior art is a liquid aerosol, it is the Examiner's position that the final, useful form is a solid. As such, it

Art Unit: 1792

reads on a precursor of a catalytically active solid material, thereby satisfying the claim as amended.

ii. This reference does not expressly teach the velocity of the aerosol particles. Nevertheless, as has been the Examiner's position in previous Office actions, the velocity of the aerosol particles is a result-effective variable affecting the extent and quality of depositions of catalyst on the surfaces of the reactor. The velocity must be such that only a desired amount of catalyst is deposited and not too much or too little. As such, it would have been obvious to one skilled in the art to optimize such a result-effective variable by routine experimentation, absent evidence of criticality. See MPEP 2144.05.

B. Claims 16, 28, and 36

i. WO '011 does not expressly state the catalyst particle size.

ii. As has been the Examiner's position in previous Office actions, the catalyst particle size is a result-effective variable affecting catalysis function: the catalyst must have sufficient surface area to catalyze the desired reaction at the desired rate, but must also fit within the reactor, and be able to form an aerosol. Consequently, it would have been obvious to one skilled in the art to optimize such a result-effective variable by routine experimentation, absent evidence of criticality. See MPEP 2144.04.

C. Claims 17, 18, and 29

Art Unit: 1792

i. As noted above, optimization of the particle size would have been obvious to one skilled in the art.

ii. WO '011 does not expressly teach the claimed means of manufacturing the aerosol or that the aerosol is entrained in an inert gas stream.

iii. It is the Examiner's position that the claimed means of production of the aerosol are known in the art and that entrainment of an aerosol in an inert gas stream is a conventional means of spraying that would have been readily obvious to one skilled in the art.

D. Claim 19

i. This limitations of this claim are not expressly taught by WO '011.

ii. It is the Examiner's position that, at least during assembly, the parts to be coated are moveable with respect to one another. Further, since WO '011 does not expressly teach that the parts move, this is a fair teaching of a fixed bed.

E. Claims 23 and 33

i. WO '011 teaches that the coated parts are subjected to further heating (calcining).

F. Claims 24 and 25

i. While expressly taught as an initial coating, it is clear that the process of this reference may advantageously apply to re-coating as well, since no conditions unique to a re-coating situation are required.

Art Unit: 1792

7. Claims 20-22 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/41011 A1, as applied to claim 14 above, and further in view of WO 02/12158 A1 (reference made to US 7,038,065 B2 as English language equivalent). Claim 37 is also rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/41011 A1 in view of WO 02/12158 A1 (reference made to US 7,038,065 B2 as English language equivalent).

A. Claims 20-22

- i. WO '011 does not expressly teach the limitations of these claims.
- ii. WO '158 teaches a reactor for the synthesis via oxidation of phthalic anhydride, maleic anhydride, etc. in which a system of catalyst-coated cooling medium containing tubes (3) and monolithic catalyst coated flow channels are utilized in the reactor.
- iii. It would have been obvious to one skilled in the art to utilize the process of WO '011 to coat catalyst on the internals of the reactor of WO '158 or, in the alternative, it would have been obvious to one skilled in the art to utilize, as the reactor of in WO '011, the reactor of WO '158. One skilled in the art would have been motivated to do so by the desire and expectation of providing catalytically coated internal surfaces for the reactor in order to successfully carry out production of the desired compound.

B. Claims 30 and 31

- i. As noted above, it would have been obvious to utilize a reactor having a monolithic (i.e., honeycomb) portion.
 - ii. As noted in prior Office actions, insofar as such monolithic catalyst supports can be formed of such materials, such would have been obvious to one of ordinary skill in view of this reference.
- C. With respect to claim 32, WO '158 additionally teaches that such reactors may contain ribbed pipes [3:4-6] and thus would have been obvious for the reasons cited above.
- D. Claim 37
 - i. WO '011 is applied herein again as set forth in connection with independent claim 14 above.
 - ii. This reference does not expressly recite that *the reactor is employed for carrying out...synthesis of maleic anhydride, phthalic anhydride, or ethylene oxide.*
 - iii. As established above, WO '158 teaches a reactor for the synthesis via oxidation of phthalic anhydride, maleic anhydride, etc., and it would have been obvious to one skilled in the art to utilize the process of WO '011 to coat catalyst on the internals of the reactor of WO '158 or, in the alternative, it would have been obvious to one skilled in the art to utilize, as the reactor of in WO '011, the reactor of WO '158. One skilled in the art would have been motivated to do so by the desire and expectation of

providing catalytically coated internal surfaces for the reactor in order to successfully carry out production of the desired compound.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Sunday, 5:00 AM - 12:00 PM and Monday through Friday, 5:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone

Art Unit: 1792

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/William Phillip Fletcher III/
Primary Examiner, Art Unit 1792

March 13, 2009